

WHAT IS CLAIMED IS:

1. An image display device comprising:  
a plurality of input terminals for inputting a plurality of image signals, respectively; and  
combining and displaying means for combining said plurality of image signals input via the input terminals and displaying the resultant image on the same screen of a display device.

2. An image display device according to Claim 1,  
further comprising at-a-glance view providing means for combining and displaying said image signals with predetermined timing using said combining and displaying means so as to provide at-a-glance views of the contents of said plurality of image signals input via said plurality of input terminals.

3. An image display device according to Claim 2,  
further comprising decision means for converting the modes of the respective image signals input via the input terminals into a mode suitable for said image display device to display the image signals,

wherein when the at-a-glance views of the contents of the respective image signals are provided for the first time

by said at-a-glance view providing means, the modes of the respective image signals or the control data thereof are stored in storage means, and when the at-a-glance views are provided at any time other than the first time, said mode conversion and said process of combining and displaying the image signals are performed by said conversion means and said combining and displaying means in accordance with the contents stored in said storage means.

4. An image display device according to Claim 2, further comprising detection means for detecting whether there is an input image signal for each of the plurality of input terminals; and

control means for controlling said conversion means and said combining and displaying means so as not to perform said conversion and said combining and displaying process for an input terminal which is detected, by said detection means, as inputting no image signal when the at-a-glance views of the contents of the image signals are provided for the first time.

5. An image display device according to Claim 2, further comprising an operation control unit which is operated by a user,

wherein said timing is given when said operation

control unit is operated by the user.

6. An image display device according to Claim 2, further comprising signal generation means for generating a signal at predetermined periodic intervals,

wherein said timing is given when said signal is generated by the signal generation means at the predetermined periodic intervals.

7. An image display device according to Claim 2, further comprising:

selection means for selecting an image signal to be displayed as a main image from the image signals combined and displayed on the same screen of said display device; and

still state detection means for, when the image signal selected as the main image is a signal of a moving image, detecting a period of time during which said moving image is in a still state over a predetermined length of time or longer, on the basis of said image signals,

wherein said timing is given when said still state detection means detects that the moving image is in the still state.

8. An image display device according to Claim 4, further comprising storage means for storing, in advance,

predetermined image data,

wherein if said detection means detects that there is an image signal input via a particular input terminal when said at-a-glance view providing means performs the at-a-glance view providing process for the first time but if said detection means detects that there is no image signal input via said particular input terminal in the at-a-glance view providing process performed later by said at-a-glance view providing means, said control means performs the control operation such that the image data stored in said storage means is read as the image signal for said input terminal and said image data is used as one of image signals combined and displayed by said combining and displaying means.

9. An image display device according to Claim 8, wherein said predetermined image data is the image signal which is input via each input terminal before said detection means detects that there is no input image signal.

10. An image display device according to Claim 8, wherein said predetermined image data is an image signal having no relationship with the image signal which is input via each input terminal.

11. An image display device according to Claim 1,

further comprising compression means for compressing image signals which are combined and displayed on the same screen of said display device,

wherein said compression means compresses image signals, which are included in the image signals combined and displayed on the same screen of said display device but which are not selected as the main image, with a compression ratio greater than the compression ratio for an image signal selected as the main image from the image signals combined and displayed on the same screen of said display device.

12. A plurality of terminal devices which are connected via a wireless network to an image display device according to Claim 1 such that an image signal is transmitted to said image display device from each terminal device, each terminal device including transmitting and receiving means for transmitting and receiving an image signal or a control signal by means of wireless communication, said terminal being characterized in that:

when the image signal period of image signals transmitted from at least two transmitting and receiving means is represented by  $T$ , the transmission period of an image signal selected as the main image from the image signals combined and displayed on the same screen of the display device is represented by  $\tau$ , the number of image

signals which are combined and displayed on the same screen of the display device and which are not selected as the main image is represented by  $n$ , and a constant  $k$  is given, the parameters  $T$ ,  $\tau$ ,  $n$ , and  $k$  are set such that the following equation is satisfied:

$$\tau = kT/(n + k)$$

13. A terminal device according to Claim 12, further comprising compression means for compressing said image signal to be transmitted,

wherein said compression means compresses an image signal, which is included in the image signals combined and displayed on the same screen of said display device but which is not selected as the main image, with a compression ratio greater than the compression ratio for an image signal selected as the main image from the image signals combined and displayed on the same screen of said display device.

14. A terminal device including a decision means for determining one of the plurality of terminal devices according to Claim 12 as a master terminal device and the remaining terminals devices as slave terminal devices,

wherein an image signal transmitted from a terminal device determined as the master terminal device by said decision means is selected as the main image among the image

signals which are combined and displayed on the same screen of said display device.

15. A method of controlling an image display device, comprising the steps of:

inputting a plurality of image signals via a plurality of input terminals; and

displaying the plurality of input image signals on the same screen of the display device.

16. A method of controlling an image display device, according to Claim 15, further comprising the step of combining and displaying said image signals with predetermined timing so as to provide at-a-glance views of the contents of said plurality of image signals input via said plurality of input terminals.

17. A method of controlling an image display device, according to Claim 16, further comprising the step of converting the modes of the respective input image signals into a mode suitable for said display device to display the image signals,

wherein when the at-a-glance views of the contents of the respective image signals are provided for the first time, the modes of the respective image signals or the control

data thereof are stored in storage means, and when the at-a-glance views are provided at any time other than the first time, said mode conversion and said process of combining and displaying the image signals are performed in accordance with the contents stored in said storage means.

18. A method of controlling an image display device, according to Claim 16, further comprising the step of detecting whether there is an input image signal for each of said plurality of input terminals when the contents of said image signals are displayed so as to provide the at-a-glance views thereof,

wherein said mode conversion and said process of combining and displaying the image data are performed for an input terminal which is detected, in said detection step, as inputting no image signal when the at-a-glance views of the image signals are provided for the first time.

19. A method of controlling an image display device, according to Claim 16, wherein said timing is given when an operation control unit is operated by a user.

20. A method of controlling an image display device, according to Claim 16, wherein said timing is given when a signal is generated by a signal generation means at



predetermined periodic intervals.

21. A method of controlling an image display device, according to Claim 16, further comprising the steps of:

selecting an image signal to be displayed as a main image from the image signals combined and displayed on the same screen of said display device; and

when the image signal selected as the main image is a signal of a moving image, detecting a period of time during which said moving image is in a still state over a predetermined length of time or longer, on the basis of said image signals,

wherein said predetermined timing is given when the moving image is detected as being in the still state.

22. A method of controlling an image display device, according to Claim 18, further comprising the step of storing, in advance, predetermined image data,

wherein if it is detected in said detection step that there is an image signal input via a particular input terminal when said at-a-glance view providing step is performed for the first time but if it is detected in said detection step that there is no image signal input via said particular input terminal when said at-a-glance view providing step is performed at any time other than the first

time, the image data stored in said storage means is read as the image signal for said input terminal and said image data is used as one of image signals which are combined and displayed.

23. A method of controlling an image display device, according to Claim 22, wherein said predetermined image data is the image signal which is input via each input terminal before it is detected in said detection step that there is no input image signal.

24. A method of controlling an image display device, according to Claim 22, wherein said predetermined image data is an image signal having no relationship with the image signal which is input via each input terminal.

25. A method of controlling a plurality of terminal devices according to Claim 12, comprising the steps of:

determining one of said plurality of terminal devices as a master terminal device and the remaining terminal devices as slave terminal devices; and

employing an image signal, transmitted from the terminal device determined in said determination step as the master terminal device, as a main image selected from image signals which are combined and displayed on the same screen of said display device.

26. A storage medium including a computer-executable program stored thereon, said program including a process of controlling an image display device, said process comprising the steps of:

inputting a plurality of image signals via a plurality of input terminals; and

displaying the plurality of input image signals on the same screen of the display device.

27. A storage medium according to Claim 26, said process further comprising the step of combining and displaying said image signals with predetermined timing so as to provide at-a-glance views of the contents of said plurality of image signals input via said plurality of input terminals.

28. A storage medium according to Claim 27, said process further comprising the step of converting the modes of the respective input image signals into a mode suitable for said display device to display the image signals,

wherein when the at-a-glance views of the contents of the respective image signals are provided for the first time, the modes of the respective image signals or the control data thereof are stored in storage means, and when the at-a-

glance views are provided at any time other than the first time, said mode conversion and said process of combining and displaying the image signals are performed in accordance with the contents stored in said storage means.

29. A storage medium according to Claim 27, said process further comprising the step of detecting whether there is an input image signal for each of said plurality of input terminals when the contents of said image signals are displayed so as to provide the at-a-glance views thereof,

wherein said mode conversion and said process of combining and displaying the image data are performed for an input terminal which is detected, in said detection step, as inputting no image signal when the at-a-glance views of the image signals are provided for the first time.

30. A storage medium according to Claim 27, wherein said timing is given when an operation control unit is operated by a user.

31. A storage medium according to Claim 27, wherein said timing is given when a signal is generated by a signal generation means at predetermined periodic intervals.

32. A storage medium according to Claim 27, said

process further comprising the steps of:

selecting an image signal to be displayed as a main image from the image signals combined and displayed on the same screen of said display device; and

when the image signal selected as the main image is a signal of a moving image, detecting a period of time during which said moving image is in a still state over a predetermined length of time or longer, on the basis of said image signals,

wherein said predetermined timing is given when the moving image is detected as being in the still state.

33. A storage medium according to Claim 29, said process further comprising the step of storing, in advance, predetermined image data,

wherein if it is detected in said detection step that there is an image signal input via a particular input terminal when said at-a-glance view providing step is performed for the first time but if it is detected in said detection step that there is no image signal input via said particular input terminal when said at-a-glance view providing step is performed at any time other than the first time, the image data stored in said storage means is read as the image signal for said input terminal and said image data is used as one of image signals which are combined and

displayed.

34. A storage medium according to Claim 33, wherein said predetermined image data is the image signal which is input via each input terminal before it is detected in said detection step that there is no input image signal.

35. A storage medium according to Claim 33, wherein said predetermined image data is an image signal having no relationship with the image signal which is input via each input terminal.

36. A storage medium including a computer-executable program stored thereon, said program including a process of controlling an image display device, said process comprising the steps of:

determining one of said plurality of terminal devices as a master terminal device and the remaining terminal devices as slave terminal devices; and

employing an image signal, transmitted from the terminal device determined in said determination step as the master terminal device, as a main image selected from image signals which are combined and displayed on the same screen of said display device.